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JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: 2000096206 A

(43) Date of publication of application: 04.04.2000

(51) Int. Cl. C23C 4/08
C23C 4/10, C23C 4/18

(21) Application number: 10265106
(22) Date of filing: 18.09.1998

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(54) HIGH TEMPERATURE RESISTANT THERMAL SPRAY-COATING MEMBER

(57) Abstract:

PROBLEM TO BE SOLVED: To obtain a dense composite thermal spray-coating film tight in adhesion by forming an alloy thermal spray-coating film obtd. by thermally spraying in an evacuated atmosphere contg. no oxygen on the surface of a metallic base material and forming an Al thermal spray-coating film obtd. by thermal-spraying Al or an Al alloy in the same atmosphere thereon.

SOLUTION: The composition of alloy thermal spray-

coating film as an under coat is shown as MCrAlX, where M is one or more kinds among Ni, Co and Fe and X is one or more kinds among Y, Hf, Ta, Cs, Ce, La, Th, W, Si, Pt and Yb. The composite coating film composed of the MCrAlX alloy coating film and Al or Al alloy coating film as an over coat can be used as it is, but it is suitable that heat treatment is executed at 900 to 1200°C for 0.5 to 10 hr in the air, in an inert gas or in a vacuum. In this way, metallurgical bonding between the MCrAlX alloy grains to each other and between those and the Al or Al alloy grains is increased to improve its denseness and also to exhibit its high temp. oxidation resistance.

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